

ABSTRACT

A method for the production of biopolymers with modified properties as well as a kit containing instructions for carrying out said method are described wherein at least one cycle comprising the following steps is completed:

- (a) providing a population of single-stranded polynucleotide molecules, wherein the individual polynucleotides of said population have both homologous and heterologous sequence segments, and wherein in said population strands are contained that are each completely or partially complementary to each other;
- (b) forming double-stranded polynucleotide molecules from the population of single-stranded polynucleotide molecules provided according to step (a) comprising double strands with different heterologous sequence segments;
- (c) partially and exonucleolytically degrading the single-strands of the double-stranded polynucleotide molecules produced according to step (b); and
- (d) template-directed single-strand synthesizing the degraded ends of the partially degraded double strand produced according to step (c).

wherein steps (c) and (d) may be carried out subsequently or contemporaneously.